BDM SUBCONTRACT FACT SHEET

CONTRACT TITLE: Area Balance and Strain in an Extensional Fault System: Strategies for Improved Oil Recovery in Fractured Chalk, Gilbertown Field, Southwestern Alabama

ID NUMBER: G4S51733 **Related WA #:** 95-A01	**CONTRACT PERFORMANCE PERIOD** 03/29/1996 to 04/07/1998
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FUNDING (1000's)	BDM SHARE	OTHER SHARE	TOTAL
PRIOR FISCAL YRS	300	300	600
FISCAL YR 1998	0	0	0
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	300	300	600

PROJECT DESCRIPTION:

This project will demonstrate comprehensively the utility of area balancing techniques in designing improved recovery programs for fractured oil reservoirs. A coordinated multidisciplinary approach is required that synthesizes geologic, geophysical, and engineering data. Methodology to be used in this project include basic geologic methods, petrologic and geophysical methods, advanced structural modeling, subsidence and thermal modeling, and production analysis. This approach will establish the importance of area balancing for understanding the distribution of strain, stress, and fractures in hanging-wall rollover structures and will further establish how these factors determine the distribution and producibility of oil and associated fluids. With this increased understanding, the best decisions can be made regarding which technologies, such as waterflooding, gas injection, recompletion, infill drilling, and horizontal drilling, can be applied to improve oil recovery in fractured reservoirs in extensional terranes, thereby facilitating efficient management of oil fields in an economically sound and environmentally prudent manner. Gilbertown is an ideal field for this research, considering the long production history and the increasing need to progress from primary to advanced recovery in the face of declining production.

Accomplishments:

R.H. Groshong Jr. and J. C. Pashin, Reservoir Scale Deformation - Characterization and Prediction, presented at the AAPG Hedberg Conference, June 22-28, 1997, Bryce, Utah. R.H. Groshong Jr., Predicting Fractures from Area Balance Cross Sections, presented at the AAPG Hedberg Conference, June 22-28, 1997, Bryce, Utah. J. C. Pashin, Area Balance, Stain, and Fracturing in Coalbed and Chalk Reservoirs: Case Studies of Extensional Structures in the Black Warrior and Gulf Coast Basins, presented at the AAPG Hedberg Conference, June 22-28, 1997, Bryce, Utah. J.C. Pashin, Area Balance in extensional Structures: Comparison Between the Black Warrior and Gulf Coast Basins presented at the AAPG Eastern Section Meeting, Lexington, Kentucky, September 27-30, 1997.

Comparison of completed zones with structural data indicates that a significant amount of untapped oil may still be in Gilbertown Field. In the structurally highest part of the field, the glauconitic sandstone units in the upper in the Eutaw Formation are behind casing. Recompletion of existing wells has potential to add up to 60 feet of productive section in this area. Examination of Selma completion patterns indicates that many of the oldest wells were completed as much as 250 feet below the reservoir seal. Infilling, deviation of existing boreholes, and horizontal drilling are methods that have potential to revitalize Selma production.